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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,310

06/25/2008

Joseph A. Luongo

W-392-02

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43840

7590

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Waters Technologies Corporation
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EXAMINER

GATZEMEYER, RYAN JON

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

02/27/2012

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,310	Applicant(s) LUONGO ET AL.	
	Examiner RYAN GATZEMEYER	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-5 and 10-13 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-5 and 10-13 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. The applicant's amendments and remarks were received on 6 December 2011.
2. Claims 1-5 and 10 are currently pending in the application.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 6, 2011 has been entered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

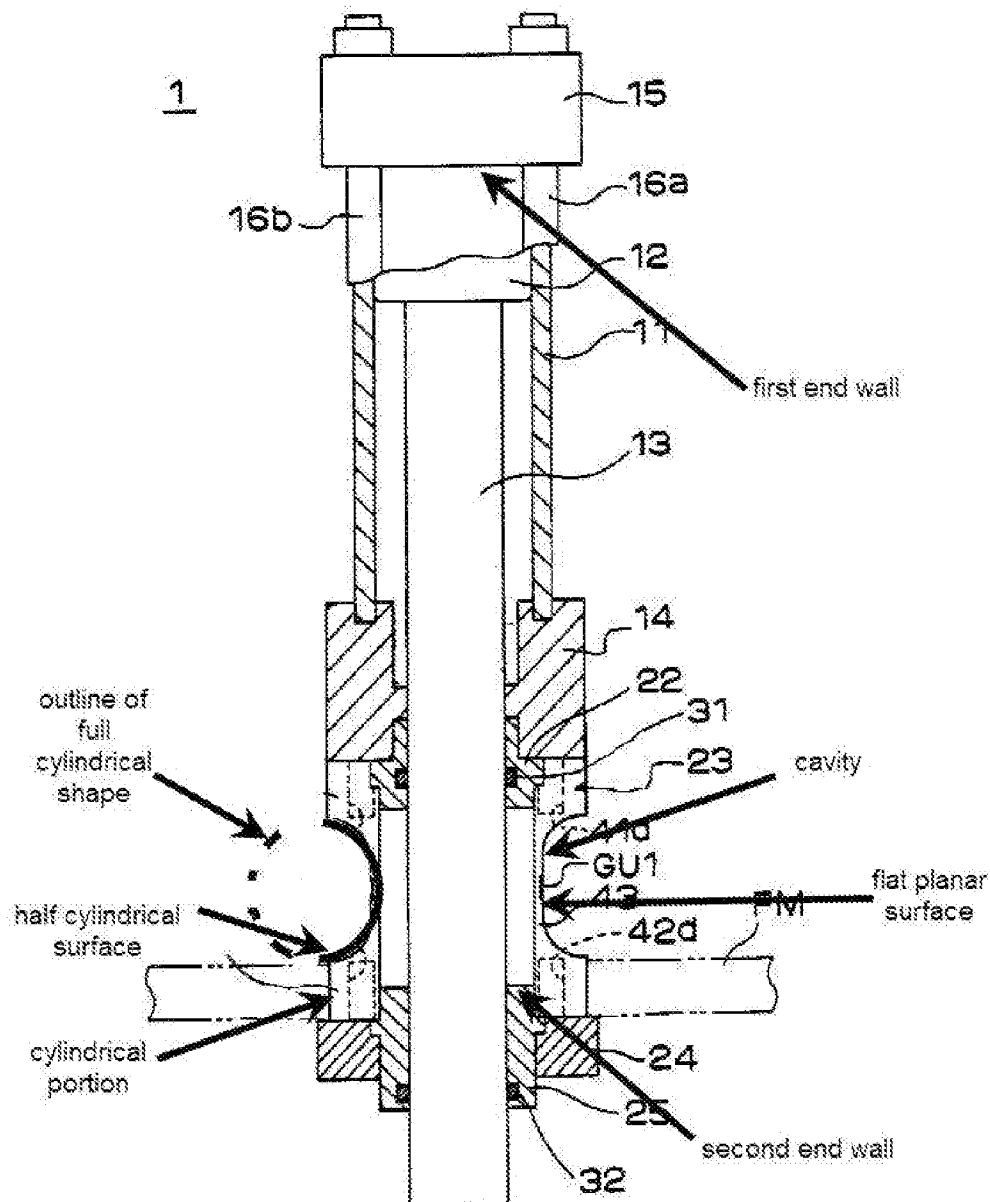
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 2, 5, 10-13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Murao et al. US Patent 6,216,581 (hereafter "Murao").**
5. Regarding **claims 1 and 10**, Murao discloses an apparatus for pumping fluid, as shown in Fig. 1, comprising: a housing (15, 11, 14, 23, 24, 25) having an exterior surface and an interior surface, the interior surface defining a cylindrical chamber having a first end wall (15) and a second end wall (25), the second end wall having a

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plunger opening through which a plunger (12, 13) is reciprocal in the chamber to cause fluid to enter the chamber through a fluid opening and to discharge fluid from the chamber through a fluid discharge opening (col. 3, lines 8-12), as shown below in the attached figure below, wherein the housing has an integrally formed cavity recessed into its exterior surface to provide a transducer surface (43) which is radially spaced from the interior surface of the housing and which is disposed between said first and second end walls, and wherein a strain sensor (GU1, GU2, GU3, GU4) is affixed to the transducer surface to measure deformation of the housing resulting from differences in fluid pressure within the chamber (col. 2: lines 50-57), the strain sensor producing a first signal indicative of the transducer surface assuming a first position when the chamber is at low pressure and producing a second signal indicative of the transducer surface assuming a second position when the chamber is at high pressure (col. 3: lines 31-38).



6. It is noted that Murao discloses the strain sensors (GU1, GU2, GU3, GU4) measure "a thrust which is substantially equal to the force exerted on the component part" and "the strain gauges generate signals, which are subjected to arithmetic operations so that the magnitude of the thrust may be found" (col. 3, lines 31-38). This thrust is equal to the force exerted on the component part and that force is a result of "A

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fluid under pressure...to cause the piston rod to assume the retracted and extended positions” and therefore it is inherent that the strain gauges measure deformation of the housing resulting from differences in fluid pressure within the chamber and also produce a first signal when the chamber is at low pressure and a second signal when the chamber is at high pressure.

7. Regarding **claim 2**, Murao discloses the apparatus wherein the transducer surface (43) is a flat surface bottom surface of the cavity, as shown in fig. 3.

8. Regarding **claim 5**, Murao discloses the apparatus wherein said exterior surface of said housing has a cylindrical portion (42) and a half cylindrical portion (43), said cylindrical portion forming a base for attachment to other apparatus (col. 3, lines 3-8), said half cylindrical portion having a flat planar surface and a half cylindrical surface, as shown above in the attached figure.

9. Regarding **claim 11**, Murao discloses the apparatus wherein the transducer surface is radially spaced from the axis of reciprocation of the plunger.

10. Regarding **claim 12**, Murao discloses the apparatus wherein the transducer surface is arranged substantially parallel to the axis of reciprocation of the plunger.

11. Regarding **claim 13**, Murao discloses the apparatus wherein the half cylindrical portion and the cylindrical portion are integral, as shown in the attached figure above.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. **Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murao in view of Cook et al. WIPO Publication WO 2005/042064 (hereafter “Cook”) as evidenced by Woodard US Patent 6609883 (hereafter “Woodard”).**

15. Regarding **claims 3 and 4**, Murao discloses the apparatus substantially as claimed except for wherein the housing has a composition selected from metals and metal alloys consisting of titanium, aluminum, and vanadium and wherein the housing has a composition comprising allow 6A14V.

16. Cook is relied upon to teach a pump housing having composition of titanium, aluminum and vanadium alloy 6Al4V (Page 1, lines 10-11) and further evidenced by Woodard.

17. It would have been obvious to one of ordinary skill in the art at the time the invention was made to fabricate the pump housing of Murao of metals with the composition as disclosed by Cook and evidenced by Woodard because “titanium of

around 0.1 mm to 0.2 mm thickness would give sufficiently low eddy losses.

Encapsulation within such a shell would be needed to prevent winding movement" as evidenced by Woodard (Col. 10, lines 40-43).

Response to Arguments

18. Applicant's arguments, see pgs. 5/7, 6/7, filed 6 December 2011, with respect to the rejection(s) of claim(s) 1 under 35 USC 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Murao.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN GATZEMEYER whose telephone number is (571)270-7559. The examiner can normally be reached on 9am-5pm EST.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

RG
23 February 2012